REMARKS

This preliminary amendment is presented to place the application in proper form for examination and to eliminate multiple dependency from the present claims. No new matter has been added. Early examination and favorable consideration of the above-identified application is earnestly solicited.

Any additional fees or charges required at this time in connection with the application may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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AMENDMENTS TO THE SPECIFICATION AND CLAIMS SHOWING CHANGES

In the Claims:

4. A method according to claim 1 [any one of the preceding claims], wherein said second diversity transmission scheme is a frequency or time diversity scheme.

7. A method according to claim 5 [or 6], wherein an original signal constellation represented as a matrix is used, and wherein each row of said matrix corresponds to a point in a multidimensional constellation.

8. A method according to claim 6 [or 7], wherein said orthonormal transformation is achieved by a multiplication with a complex matrix.

10. A method according to claim 8 [or 9], wherein said complex matrix is obtained based on an upperbound on the symbol error rate or based on a cutoff rate.

11. A method according to claim 1 [any one of claims 1 to 10], wherein said diversity transmission method is used in a downlink transmission of a cellular network.

12. A method according to claim 1 [any one of the preceding claims], wherein said transmission signal is a bit stream and said plurality of subsignals are substreams.

14. A method according to claim 1 [any one of the preceding claims], wherein said wireless communication system is a WCDMA system.

15. A method according to claim 1 [any one of the preceding claims], wherein said first and second diversity transmission schemes comprise at least one of an open loop [and/or] and a closed loop system.

16. A method according to claim 1 [any one of the preceding claims], wherein time slots of frequency carriers used in said second diversity transmission scheme are spaced apart to such a degree that independent fading is assured.

17. A method according to claim 1 [any one of the preceding claims], wherein said transmission signal comprises a signal constellation generated by optimizing the bit error rate and the peak to average ratio for a Rayleigh fading channel.

20. A transmitter according to claim 18 [or 19], wherein said second diversity transmission scheme is a time or frequency diversity transmission scheme using a plurality of time slots or carrier frequencies.

21. A transmitter according to claim 18 [any one of claims 18 to 20], wherein said transforming means comprises a complex diversity transformation unit (11) arranged for

performing an orthonormal transformation to constellation which preserves Euclidean distances.

22. A transmitter according to claim 18 [any one of claims 18 to 21], wherein said transmitter is arranged in a WCDMA base station.

25. A receiver according to claim 23 [or 24], wherein said first diversity transmission scheme is a space diversity transmission scheme.

27. A receiver according to claim 23 [any one of claims 23 to 26], wherein said second diversity scheme is a time or frequency diversity scheme.

29. A receiver according to claim 23 [any one of claims 23 or 28], wherein said transmission signal is a QPSK signal and said receiving means comprises a bank of 2M correlators, wherein M denotes the number of transmission antennas used in said first diversity transmission scheme.

30. A receiver according to claim 23 [any one of claims 23 to 29], wherein said receiver is arranged in a mobile WCDMA terminal of cellular network.